AMERICAN JOURNAL OF OPTOMETRY

VOL. 8 DECEMBER, 1931 NO. 12

OCULAR MYOLOGIC DIAGNOSIS*

Lloyd K. Wyatt, Opt. D.
Peoria, Ill.

The world is full of "yes" men. There are some who will say, yes, to anything, because they are too diffident to think for themselves. If this were not so, the techniques and beliefs we follow in our practice, would be old today, not new. Fortunately there have been enough "no" men in our profession to tear down the time worn and obsolete beliefs of the past and they have introduced and are still introducing new facts and techniques, which are slowly but surely elevating Optometry to the highest ethical standards.

I really believe that the indifference, the laxness, the skepticism, shown by so many optometrists toward muscle work is born from their misunderstanding or total lack of understanding of the basic principles governing this work and to make matters even worse their utter lack of any intentions or effort to understand them. While I agree ocular myology offers many strange and seemingly unsolvable problems, yet I feel this in itself should be enough to stimulate an interest in it. There are no final truths in any science; seeming truths of today are smiled upon tomorrow; literally hundreds of proven theories are being exploded every day, yet, many and I might almost say most, optometrists lie supinely on their backs apparently ignorant of these facts.

This article is not written in the guise of an authority. I have weeded out this and that rule, theory, experiment and mere supposition and have retained in my own practice certain procedures and techniques, which seem to suffice and give me at least a certain degree of success in daily practice. I trust that some food for thought will be contained in these few pages.

*Submitted for publication June 22, 1931.

For convenience of study we may class the normal positions of the eyes in relation to one another under these headings: First, the anatomical—that position the eyes assume, while the conscious mind is not functioning. This position is out from each other (a state of exotropia) caused by the shape and position of the orbital cavity. Second, the tonal or primary, that position which the eyes assume when viewing binocularly objects at an infinite distance (which, by the way, is not twenty or thirty feet), and third, the secondary, any position the eyes assume when viewing, binocularly, any objects at a finite distance.

When we take our various phoria and duction tests, what we are interested in discovering is not the position of the eyes nor the actual power of the muscles but rather it is the relationship which exists between the various antagonistic muscles. To say that a person has a duction of so much, means nothing, unless we know exactly how much antagonistic action this amount of measured duction must overcome. But of more importance still is the investigation of the relationship between the accommodation and convergence, two inseparable functions, regardless of which is dominant or most important. When I refer to accommodation and convergence I refer to them both in their positive and negative values.

For the sake of clearness let us go through the routine of a muscular examination step by step and thus bring out different points as we go along. We shall assume that everyone is adept and proficient in obtaining the approximate correction either by subjective or objective methods, or both.

We first take the measurement of the phoria with naked vision or with the already worn correction before the eyes. There is only one correct way to take the phorias—that is by the disassociation method with base-up or down prism over one eye or divided over both and using a test object which assures the control of the accommodation—a large letter, picture, something with quite a bit of detail. The presence or absence of accommodation will affect the phoria and if we can but insure the action of accommodation, we have a phoria found under a definite condition. In using the Maddox rod or point light, the accommodation may or may not be in use, at least we know there is no stimulus to accommodate, and the result is that we are not sure of the condition under which the phoria was made. With the Maddox rod, we find more nearly the anatomical condition of the eyes at rest. We are not interested in that because after we find it we can do nothing with it. When the phoria is found with accommodation in use we know at once the positional tendency of the eyes as they exist in the patient's daily life.

Let us suppose we find in the phoria test orthophoria, or exophoria of say 2$^{\Delta}$. As yet we know absolutely nothing, but if we

should find a high exophoria or worse still an esophoria we can well be on our guard to look for hyperopia—perhaps latent. Latent hyperopia can be responsible for both conditions, a too close association between accommodation and convergence in esophoria, or an utter exhaustion of the interni in exophoria, the exophoria in this case being probably a by-product of a former existing esophoria. This cannot be taken for a positive diagnosis but it serves very nicely as a clue to further investigations. In fact a phoria for far or near by itself is absolutely useless or at best not dependable.

We now make our phoria test for near under the same refractive conditions. Obviously if the patient be presbyopic we should use the present correction if worn, if not worn we dispense with the test. We must use a chart which will insure the use of the accommodation such as a picture about the size of a postage stamp containing quite a bit of detail. If we do not bring in the use of accommodation in the near test we cannot even remotely guess how much of the phoria is due to the action or non-action of the accommodation. We should normally expect to find from 4^{Δ} to 6^{Δ} more exophoria for near than at distance. The difference between the two phorias being called physiological exophoria. I personally believe that the ductions without the Rx. can be eliminated. It usually avails us nothing and is quite likely to produce fatigue too early in the examination. After all, what we are principally looking for are the *tendencies* of the eyes under the prevailing conditions as compared with the conditions produced by our prescription.

We are now ready to determine our approximate prescription by whatever method we are accustomed to depend on, be it subjective, objective or both. I personally cannot imagine in this day and age a modern optometrist depending alone upon the subjective findings. However, your final correction will depend upon the findings of your phorias and ductions.

Now we take our phoria test with the correction in place using the same technique as was used without the correction. Let us assume it is a case of hyperopia. Let us say that the phoria has now changed from esophoria to orthophoria or exophoria, or that it has changed from orthophoria to exophoria, or that the exophoria has increased. We now know beyond any doubt that the rectus interni have relaxed and it is only logical to assume that the relaxation of accommodation is responsible for it. If it is a case of myopia and the exophoria has diminished or an esophoria has been produced we know at once that we have caused the interni to contract because of a stimulation to the accommodation. If the alteration is too great our ductions must govern our further procedure at this point.

In hyperopia, esophoria is due to excess accommodative convergence. In myopia, exophoria is due to insufficient accommodative convergence. Exophoria of any amount in hyperopia and esophoria in myopia is rather rare and can be traced to definite causes. How-

ever, as before stated, exophoria may be caused from exhaustion due to excessive or latent hyperopia, still, it may simply mean a looseness between the functions of accommodation and convergence.

We are now ready to take the distant ductions. The test object should be fairly large and should be an object with sufficient detail to insure the function of accommodation—such as a picture, the 200 foot E or some similar object. It is best to take the abduction (out duction) first because, of the two functions, viz., adduction and abduction, the former is the more apt to assert itself and might even materially change the abduction findings. Rotate prism base-in fairly slow and with very small jerky movements instruct the patient to notify you when even a slight blurring of the object takes place, make note of the amount of prism and continue base-in till diplopia is produced, now rotate back slightly faster and note when refusion first takes place. All three of these readings are vastly important. That amount of prism which just causes a blur is a measure of the negative relative convergence, that is, the amount of convergence which can be relaxed without disturbing accommodation. This is very important, as convergence and accommodation should not be locked too tightly. If the negative relative convergence be small, it shows a looseness in the accommodative convergence hook-up. If we are dealing with an esophore the esophoria will be much more easily eliminated under this condition. This is especially true if the breaking point is considerable more than the blur point. If the recovery point is less than the blur point base-in exercises are indicated. The point of recovery serves as a guide to govern the amount of prism to be given for temporary use.

The adduction (induction) for distance is not so important, as it is, after all, more or less a supplementary factor in distance vision—abduction is by far the more important. However, the adduction should be taken, looking for the same three factors. That prism base-out which just causes a blur is a measurement of the positive relative convergence that amount the eyes can converge without bringing the accommodation into play. It shows exactly how tightly or how loosely the accommodation and convergence is hooked together. Practically speaking, the positive relative convergence should be about half of the total adduction. The recovery point should be at least as high as the blur point. Repeat the adduction several times; if on each succeeding time the adduction is as much or more, innervation is good, if less, prism treatment is indicated and more especially if the reversion to fusion is poor. The duction for distance is of far less diagnostic value than that for near, but should be carefully taken as it quite often discloses valuable clues to govern the rest of our examination.

Now, for near the first consideration is the near or reading correction, obtaining the amplitude of accommodation, etc. If pres-

byopic, this correction should be used. The near point test should be taken at that point for which the individual will use his glasses.

The first, and I believe the most important investigation, is that of the fusion ability. This is done very quickly and accurately by means of the F L Kratometer chart or some other such similar chart. If you do not have a Kratometer you can procure the charts and very easily arrange a holder for them on your phorometer reading bar. The card is ordinarily placed at 35 cm. from your eyes. 10$^{\Delta}$ base-out prism should be thrown in over each eye, a total of 20$^{\Delta}$ base out or, if the distance is more or less, sufficient prism to allow for the distance should be used. Have the patient keep his eyes closed while you are arranging the cards and the prisms. Instruct the patient to tell you immediately upon opening his eyes what letter or letters he sees on the card (never tell him what to expect). If either F or L is seen, there is suspension or suppression. If E is immediately seen the fusion can be considered as good. Remember that if suspension or suppression exists, you must be very, very careful in taking any and all duction tests. Repeat this fusion test with the No. 4 and No. 7 Kratometer charts. These charts are used as more delicate tests for suspension. I shall not go into a discussion of the difference between suppression, suspension and suspenopsia as I believe this is study in itself, and I personally must confess I do not know all I should like to about it. Many men believe this F L test should be made at the outset of the examination so as to be governed in making their duction tests.

The near phoria test should be taken in the same manner as for distance using as a target a small picture such as postage stamp or the No. 11 Kratometer chart. It will require at least 8$^{\Delta}$ prism base-down on one or up on the other or divided between the two to cause sufficient separation of two images to eliminate any attempt for fusion. In taking the phoria for either distance or near enough prism should be applied to make the images cross, reducing the power until alignment takes place. As before stated the difference between the phoria for distance and the phoria for near is called the physiological exophoria. This should be about 4$^{\Delta}$ to 6$^{\Delta}$. If the exophoria for near is as much or more than that expected there may possibly be a convergence insufficiency or inefficiency. However, a great many times the exophoria is caused by exhaustion from latent hyperopia. In this case the exophoria will become normal with the addition of the proper amount of plus sphere. Also in this particular case you will usually find a considerable change in prescription from that already worn. If the physiological exophoria is less than expected there is a too close association between accommodation and convergence and perhaps there is an existent latent hyperopia. Addition of plus should be tried—if this does not suffice base-in treatments are indicated—the near ductions however will be helpful in the determination of the proper procedure.

In taking the near ductions we use the same charts as for the phoria tests to insure the use of the accommodation. The same three factors should be taken as for the distant ductions, namely, the blur point, break and recovery. The near ductions are really much more important than the distance ductions for the reason that the eyes are used so much more for finite than for infinite distances. Here we are as much interested in the adduction and the positive relative convergence as we are in the abduction and negative relative convergence. Practically, I believe the postive and negative relative convergences should be nearly equal or in other words there should not be too close an association between accommodation and convergence either way. Roughly speaking, the sum of the two should equal about 25 to 35 prism diopters. Flexibility of the eyes is after all the ideal comfortable situation.

As an average the amount of convergence the patient can maintain for any length of time is found to be about 1.3 of the total convergence amplitude. The convergence amplitude should be computed by using the phoria, plus the convergence necessary for the distance in question, plus the amount of prism base-out the patient can overcome at that distance.

Let us assume a case in which the exophoria for near is the same or less than that for distance. We immediately diagnose it as a case of tenseness—too close an association between accommodation and convergence. We measure the ductions and find: adduction 4/18/12; abduction 16/18/12. This immediately justifies our contention. Let us assume a case in which the exophoria is considerably more than we would ordinarily expect. We at once suspect too loose a connection between the functions. The ductions show adduction 18/24/16; abduction 4/28/22. Our contention seems very well justified. Now, what can we do about the first case. The answer is base-in exercise to bring about the relaxation. You will find that base-in exercise will increase the positive as well as the negative relative convergence. Now, about the second case. Suppose we add x100 sph. and repeat the near phoria and duction tests. We now find the exophoria less and the ductions somewhat like: adduction 14/22/20; abduction 12/30/26. Now, if the x100 increases the exophoria we are fairly well assured that we have a case of true convergence inefficiency if not insufficiency. Base-out exercises should never be given unless the practitioner is absolutely sure that convergence inefficiency or insufficiency exists. It has been my experience that the treatment of all muscle cases are greatly facilitated by starting with general motility exercises in some form or other.

I have tried to bring to you the following major points. First, what I consider to be the minimum requirements of a muscular examination:

1. Phoria without Rx or with old correction for distance.
2. Phoria without Rx or with old correction for near.
3. Phoria with Rx for distance.
4. Phoria with Rx for near.
5. The F L fusion test for near.
6. The ductions with Rx for distance.
7. The ductions with Rx for near.

Second, some pertinent facts relating to the interpretation of these findings:

1. Phoria for distance or near alone mean nothing.
2. The phorias and ductions should be made with controlled accommodation.
3. Be on your guard for suspension or suppression.
4. The blur point is of vital importance.
   a. A low blur point and high break usually indicates latent hyperopia.
   b. If recovery is low, base in exercises are indicated.
5. Fusion faculty keeps the phorias from being tropias.
6. In hyperopia, esophoria is due to excess accommodative convergence.
7. In myopia, exophoria is due to insufficient accommodative convergence.
8. Hyperopia with exophoria and myopia with esophoria is rare.
9. Both esophoria and exophoria may denote latent hyperopia.
10. Base out exercises should be given judiciously.

In summing up I might say that the technique I have offered you is in no wise to be considered as infallible. No technique should be considered so. The various tests and theories have seemingly been proven out in my own practice and I offer them not only as I see them but as I practice them. I am not unmindful of the fact that the truth of today may prove the folly of tomorrow, but until some better method comes my way, I shall doggedly cling to that which I believe to be right.

DR. LLOYD K. WYATT,
311 CENTRAL NATIONAL BANK BLDG.,
PEORIA, ILL.

THE SIGNIFICANCE OF PHORIA AND DUCTION FINDINGS AT A GIVEN POINT AT A GIVEN TIME*

A. M. Skeffington, Opt. D., F. A. A. O.
Chicago, Ill.

The advent of neurological consideration of the determination made in optometry has made essential a complete new orientation of viewpoint in weighing the symptomological values of the determinations made in an examination.

The manifest error; that is, the definite lens power which can be placed before an eye and still permit clear vision, is no longer considered in the sense of "error" at all. We have come to understand that the lens accepted represents the end result of the amount of innervation being expended by the brain, in accommodation, at that particular point of fixation, or more properly speaking, point of stimulation to all the elements of the syncritic faculty, unassociated with the adductive faculty.

The various phorias, long considered as bearing eloquent testimony to inherent weaknesses or strengths of the various muscles, when they vary from the expected, are now given consideration solely as symptoms of fatigue; they were once called a "tendency," today we know them to be quite definite placement of the position of the eyes, dictated by the fatigues brought about by the stressful use of the eyes, valuable only for consideration at the particular point of stimulation at which they are manifest and valuable only for consideration at the time of their taking.

The duction, considered as witnesses to the relative strengths and weaknesses of muscles, are today known to be measures of the amount of innervation—measured by end results—of the amount of innervation budgeted by the brain as a reserve to a given function of activity, valuable only at the point of visual stimulation being considered, and valid only at the time of their taking.

This matter of considering the duction as a measure of reserves brings the memory to the long-held contention of the master mind of

Sheard, that we were measuring reserves, expressed in the terminology familiar to us of positive and negative fusional reserves. Much criticism has been leveled at this calling these duction determinations "reserves," yet that is precisely what they manifestly are.

The eye utilizes a given amount of nervous energy to accomplish a given act. Unless that minimum amount is expended, the act is not accomplished. Should more than the necessary quantity of energy be expended, there would result an over-activity which would result in destruction of the essential seeing of a single object and seeing that object clearly.

However, it is essential there should be a reserve of energization available to meet possible demands. It is unnecessary to elaborate on the known fact that under fatigue conditions, the expenditure of an increased amount of energy to accomplish a given act is necessary. This increase of energy expenditure must be met without disturbing the associated energization of other functions. The brain has provided for this excess draft by allotting a certain amount of effort which experience has shown to be ample, to the various functions.

When excess effort is required of a function, but one of the elements remains static, as in the taking of a duction, it is this reserve which is measured.

Sheard, thinking constructively long ago, and attempting to make his deductions clear and attempting to state his conclusions, made use of the idea of a financial reserve and spoke of "ability to pay debts."

Giving credit to Percival, he worked out graphs of "zones of comfort" that would make mathematically accurate the charting of the conditions existing in a pair of eyes, whether for comfort or its lack, and to the mathematically minded, the whole matter becomes intelligible. These men, as seems to have been true of all the really great mathemathetical thinkers, were able to carry their deductions from figures and graphs, back to a point where they became one with the methods, truer perhaps because of their being more nearly the essence of the living being itself, determined from neurological readings of the same determinations.

The barrier to a free and complete understanding was the drilled knowledge that the refractionist was dealing with an "error of refraction." That this so-called "error" was in truth the expression of a primary defect in the mechanical arrangement of the eyeball and was remedied by an excess effort of the refracting media and therefore, when relieved, the "error" was corrected and all was well with the patient.

Drawings, beautifully done to scale, were shown of these "errors." Distributors of lenses worked out transparencies, beautiful in their workmanship, to show these inherent "errors." The public was taught that the eye which needed care was a "defective" eye, and as much a matter of shame as a deformed foot. The weakness was ameliorated in

its expression as much as possible by ever-increasing loveliness of design, but the clicking of sympathetic tongues over the "misfortune" that compelled the unfortunate to submit to the indignity and confession of defect implied by the wearing of a correction continued.

This was wholly wrong. That the so-called "error" was not a defect, but instead was the wise provision of nature, without which binocular, stereoscopic vision could not have been developed and probably mankind not have survived, and without which our whole marvelous civilization of near-point concentration certainly could not have come into being and certainly not continue, was forgotten—if it was known. That the individual who wore a lens was not merely wisely "correcting a defect" as would be done if a leg were short or a spine crooked, but manifesting the same intelligence that causes us to acquire an education rather than continue illiterate and that the tongue-clicking sympathizers, displaying a crass ignorance and a backwardness, were the ones with a defect and the defect was mental, has been allowed to go unheralded.

Wars of words and forests of good trees gone to paper, have been used in the battle over the understanding of the relationship existing between the two prime functions of binocular vision. The simple fact that science has not as yet been able, from the laboratory and dissection tables, to state unequivocally just the association, has not deterred the battle of theories, the creation of new and often wierd terminology, nor hindered the crystallizations of hypotheses into theories full-blown, however tenuous the foundation of supporting facts.

The answer to the contention that no binding association exists is as simple as was that of Diogenes, who, when confronted with the finely spun mathematical hypotheses that progress could not be made because of the ever-existing remnant of space to be covered, surveyed the wordy disputants with disdain, arose and walked. When it is averred that no such association in the eyes exists, it is but necessary to stimulate one of the functions, see the other react to the same stimulus, to know, from demonstrated fact and not conjecture, that they are associated.

When the opposite extreme is held, it remains but to show that one function can be deterred from activity at the same moment the other is stimulated, and that, continued, this separation of activities will result in a permanent alteration of their association.

The one really important fact that must be established, and without which there can be no real understanding in optometry, is that all these varied activities result solely from impulse from the brain, and that any variation from the great standard in the human race must result from increased or diminished nervous force and there must always be a causative factor in any such alteration.

To read much of the literature, the neophyte would conclude that phorias and ductions were malignant entities of themselves, without cause, from some wholly erroneous running amuck of impulse and growth such as present conjecture assigns to carcinoma and like ab-

normal growths. An exphoria was looked upon, written about and treated as though it were of itself a primary cause of trouble. A lessening of an expected duction power was named, catalogued and treated as an essential weakness of the very muscle itself. Books, magazines, papers and lectures are filled with references to "muscle work," "weak muscles" and like wholly misleading terms.

Whole techniques have been built on the necessity of doing certain things with prism lenses with "bases" in a certain direction, a whole philosophy of correction has been built up on the placing of a prism in a certain direction, criterions for determination of applicable lens power set on determinations that are as variable as the impulses in the body itself, when basically the problem has been from the first and continues, in every instance, to be: "What has caused this variation from the normal," and the required answer is not in lenses or prisms, which are but tools, not in the elimination of symptoms and with their disappearance, however temporary, to claim victory, but in seeking for the basic reason why.

A normal eye gives no symptoms of abnormality. Any such deviation from the expected normal is and can be but a symptom. And the finding of symptoms and their correlation into a reasonable understanding of the "reason why" is the sole highway to success in any case.

Fundamentally, and without any elaboration, the case may be stated as follows: The child is born with the visual axes of the eye practically parallel, and at wide variation from the anatomical axes of the orbit. This parallelism is the result of an innervational impulse to the function of adduction. The macula has not been completed at birth, and is not completed until the sixteenth week of life. While parallelism is maintained from the first, the discriminating use of accommodation is not—a high hyperopia is manifest, the macula is unusable and only experimentally does the function of accommodation come into use.

Gradually, through constant association in the act of vision, there comes to be an association of the two functions, in the degree of innervation essential to the gaining of binocularity. Definite statement of the why and how of this association is being intentionally avoided.

A fine discrimination of the exact amount of innervation demanded by each function, that fixation may be maintained at any given point, is developed. This becomes practically a fixed, it might well be called a linked, association. A ratio of quantities of innervation is built up, that whenever a certain number of units of vital energy are utilized in one function, almost automatically an associated number of units is supplied the associated function.

A fatigue demands an increased amount of innervation be expended to accomplish a given act. Fatigue in any muscular activity is inevitable. Had there not been provision made for the expenditure of increased energy in one function without an immediate like excess

expenditure in the associated function, constant and inevitable diplopia and blurring would have resulted. Constant and continued fixation would be impossible, the attempt would have been abandoned and binocularity lost. This is exemplified in the deliberate abandonment by the brain to the various functions of the body. It is of less value to

It was necessary to have a certain amount of accommodation available which would not instantly be brought into subjection if excessive energization of adduction were demanded. A leeway in adduction free from association with accommodation was necessary to insure single vision in case of excess expenditure of energy in the accommodative function. Hence, we have the so-called "error of refraction" which is the free and deliberated untrammelled accommodation, not linked up with adduction, and the true adduction, possible to stimulate without obtaining an immediate reflex stimulation of accommodation.

It is not intended to set up an inflexible, mechanistic concept of this deliberate freeing a certain amount of accommodative energy by the brain, in place of the old mechanistic concept of a too long or too short eyeball accounting for lens applicability. Too many factors enter into the problem. Variations in growth, interference with metabolism in the formative period by varying intensities of pathological conditions, in fact, all the uncertainties that attend the human body, and its individual variations of nervous energy and bodily formations.

Diagonsis must be made from determinations of the intensity of fatigues as shown by the diminution of definitely allotted reserves by the brain of such binocular vision in cases of developed strabismus.
know the desirable quantity of energy available to a given function than to have a measurement representing the minimum of energy which will allow a comfortable activity in the discharge of the essential maintenance of binocular vision under the varying demands of the individual.

It is obvious that if the determinations made in an examination of the eye are really measurements of existing or absent fatigues, that these will vary in the degree of fatigue existing either in a restricted area or in the whole body. Not alone must consideration be given to muscular fatigues in themselves, but the widespread or local manifestations of toxic fatigue demand weighing.

If the phoria was an entity, to be given consideration in and by itself, it would necessarily remain almost a fixed quantity. If the duction represented a weak or strong muscle, it would continue to present almost a static figure. Every observant refractionist knows that the phoria of a morning may be opposite in type late of the same afternoon.

Literally it is the "placement of a pair of eyes, conditioned by the habitual fatigue." In the increase or decrease of the intensity of that fatigue, from whatever cause, will evenuate an alteration in the quantity of the phoria. Without the remotest wish to introduce a new nomenclature, it is pertinent to comment that it might have been well to

denominate all phorias as plus or minus variations from the parallel. In this way, it would have been easier to understand the movements back and forth in the arc of the eyes' activity.

To talk of varying from esophoria of a morning to exophoria of an afternoon sounds like iconoclastic smashing of cherished beliefs. But when the eye is understood to be placed in special projection by the habitual association of the two functions in their associated energization by the brain, and that any alteration in this energization necessarily results in changes in the placement regarding their relation to points in space, then it becomes evident that when, in a given case, the exact quantity of a phoria is cited as being cause for diagnosis, it is just to demand the literal time of taking in contrast to what the condition would show at a differing time.

Likewise, research has shown such wide variations in the habitual association of the functions at different points of stimulation in space, that for accurate analysis the definite stimulation point must be named if the absolute condition is to be given diagnostic weight.

This being true of phorias, it is even more definite in the consideration to be given ductions in the diagnostic understanding of any ocular problem. The work of Brombach has shown the great variations in the phorias and ductions in a given day, if varying types of toxemia are present. Like variations can, and do, show forth when there is an excessive and unusual muscular effort at unaccustomed points of stimulation.

It is not possible, then, to diagnose from any one phoria or duction finding nor from duction findings made in but one area of muscular activity. There must be a balanced analysis of all the varying fields at a sufficiently large number of points of stimulation to present a complete picture of the conditions present.

With such a well rounded analytical picture of the fatigues present in the case under consideration, there exist means of knowing definitely when or whether the patient has really been restored to a balance sufficiently near the normal to permit comfort. No less scientific procedure can well be conceived than basing the conclusion of the patient's recovery or lack of it on whether or not the lenses supplied are brought back with complaint. There must be an elimination of the symptoms of trouble or the trouble continues.

All of us are but too familiar with the unfortunate with several pairs of lenses, all different, that are worn in varying alternation, each giving a degree of relief for the moment, but with inevitable reoccurrence of difficulty. Perhaps nothing has so completely militated against the obtaining of complete confidence from the discriminating public than this policy of determining success in a case by the failure of the patient to return and complain.

We contend that the determinations set forth in the Basic Diagnostic Outline, formulated as they are on the understanding of the

fatigue picture presented by any case examined, but which is not and is not intended to be a complete examination, are essential to an understanding of the case. Many other findings may be necessary in any case, but this is essential in every case. The laboratory technician who decides to leave out certain tests in order to simplify his routine would be of small value to the diagnostician.

The refractionist who eliminates essential points in his examination is not diagnosing, he is guessing. Much agitation has gone forth for a "simplified" examination. There are but two kinds of examination. The ancient and honored subjective examination, which determines the manifest lens acceptability at the time of examination and pretends to no more—and an examination which includes the reductable minimum of determinations to judge accurately of the problem confronting the practitioner.

Witness to the contention that we are but determining the degree of fatigue as shown by the lessening of the amount of nervous energy available in reserve and that as these reserves lessen, the degree of fatigue in that particular area of activity is shown, is the graph presented by these various types of cases as worked out on the "zone of comfort" graph of Sheard presented before this Acadamy in Chicago in 1928.

Four graphs are cited. The first, the normal and comfortable case, according to the table of expecteds as used in the Foundation clinics. The other three are typical of the three great types of discomfort problems that exist, in varying degrees of complications, in every case presenting itself to the refractionist as being uncomfortable.

Graph one is the "comfort chart" of Sheard, showing the essential scope of activity lying in the "zone of comfort" as maintained by Percival and Sheard. Graph two is the typical toxic esophore type, with the findings attached. Graph three is the accommodative insufficient, the so-called "latent hyperope," together with typical findings, and the fourth graph is the adductive insufficient and typical determinations.

In all of these it becomes obvious that only through the removal of the symptoms as expressed in the variations from the table of expecteds, can the essential demands of visual comfort find place in the "zone of comfort." We believe this mathematical graphing is quite too rigid for the flexibility of the actions of the human body, but the parallel is sufficiently striking to add great weight of evidence to the conclusions drawn.

1. That a phoria is not an entity. That it is diagnostically wrong to cite as a cause of trouble existence of such and such a phoria of so many prism diopters. Such phorias can only be considered symptomatic of an existing and habitual fatigue. That they are valid only when given diagnostic consideration as a part of the whole of the examination, and particularly with the phorias shown at other fatigue points in the examination and at other points of stimulation to the elements of

the syn-critic faculty. They are valid only when the time of taking is considered. That any usable definition must include the expressed or implied phrase, "at a given point of stimulation, at a given time."

2. That the ductions, far from expressing weakness or strengths of any given muscle or pair of muscles, are determinations of variability in the reserve of nerve innervation allotted by the brain to that particular function—and in the degree of their reduction from the table of expecteds, the end result of the degree of fatigue is shown. That measurements of ductions in but one area of activity at one point of stimulation are more liable to be deceptive than informative and that the quantitative quoting of duction quantities must carry the implied phrase, "at a given point of stimulation, at a given time."

3. That diagnosis of the cause for discomfort can only be made by tracing back the reason for the manifested fatigue to the source interfering with the normal flow of allotted neural energy to that function under consideration.

4. That any means of correction, whether lenses, prisms or stimuiation to effort, must be considered, not in the light of what effect they have on beams of light, from the standpoint of the physicist, but from the more pertinent understanding of the inhibitions and stimulations to enforced activity from the associated brain centers controlling the whole involved apparatus of binocular vision.

5. That insistence must be made on a complete basic minimum of determinations, for an incomplete optometric examination is as valuable and not more so, than an incomplete laboratory analysis of the physical condition of a patient. There is an inclination to score some general practitioners of other professions for inadequate diagnostic exactitude, by men whose own findings are insufficient to warrant anything like a complete picture of the innervational problem presented in the case.

6. That completion of a case be postulated on the elimination of symptoms of fatigue. Since all ocular discomfort comes from dissimilar stimulation to the dual elements of the syn-critic faculty, as expressed in the fatigue findings of an examination, the case cannot be completed until this dis-similiar stimulation be eliminated.

DR. A. M. SKEFFINGTON,
330 SO. WELLS ST.,
CHICAGO, ILL.

SHALL OPTOMETRY APPLY OCULAR PHYSICAL THERAPY IN ITS PRACTICE?*

Affirmative Address by

Jack I. Kurtz, B. Sc., A. O., F. A. A. O.
Minneapolis, Minnesota

Mr. Chairman, Dr. Padelford, and Fellows of the Academy:

From the atmosphere that has prevailed here during this wonderful banquet it is very evident that we are starting our debate this evening in excellent spirits on both sides and it is my wish and hope that we shall end in the same spirit.

It is indeed a pleasure as well as a privilege to me to have this opportunity to discuss before you, Fellows of the Academy, this very important and vital subject which to my mind will not only influence, but will accelerate, the progress of our profession more than any other factor we know of at the present time.

The subject of this debate is "Shall Optometrists Apply Ocular Physical Therapy in Their Practice." It is my privelege to be on the affirmative side and knowing the scholarly and philosophical mind of my worthy opponent, I feel certain that he, too, would probably wish to be on the affirmative side and the only reason he is on the opposite side is due to the fact that there are only two sides to this question, and as long as I have taken the affirmative he had to take what was left—the negative.

I am fully conscious of the opponent I have to meet tonight—a student—a thinker—and an active worker for the cause of Optometry, and when I look back to the record of his achievements and accomplishments and to the high esteem in which he is held in the councils of the profession, I confess to you that I feel "kind of scared." All the strength that I can get as I enter upon the debate of this question comes from my earnest conviction that there is truth and justice in my cause. Therefore, I enter this debate with the sentiments so well laid down by Shakespeare in the last act of Macbeth, "Lay on, MacDuff, and damned be he who first cries hold, enough."

*An abridgement of the material presented before the American Academy of Optometry at Omaha, December 15, 1930.

The affirmative side of any debate works somewhat under a serious disadvantage because it is obliged to state its case not having any knowledge at all as to what the negative is going to do with it. I shall be before you for forty-five minutes plus an equal amount of time which my opponent will take up, making ninety minutes in all before I have any chance to get back at my opponent. He, however, has a chance to turn the artillery on me in forty-five minutes. As the affirmative, I, on the other hand, have the advantage of being able to define the questions under discussion, and, in a way, to choose the weapons and pick out the field of conflict. I will, therefore, at the outset state the subject of our debate and define its meaning and scope so that we may have a clear and concise idea about the proposition to be discussed and that we may also have a solid platform to stand upon, not only for ourselves, but for the profession of Optometry as well. I am not interested in any other kind of a platform, certainly not in the kind our friend in New York City stepped on. As he boarded the street car he stopped on the platform and the conductor called out, "Step inside please, you must not stand on the platform," and the young man replied, "This must be like a political platform, something to *get in on* but not to *stand on.*" I am interested in a platform that we can stand on and carry on our practice in a way which will be a credit to ourselves, to our profession, and a benefit to mankind.

Ocular Physical Therapy, as I expound it, means the study and application of physical agents to the human eye which will restore the normal functioning power of the ocular mechanisms whose functions have proven to be physiologically abnormal. The physical agents referred to are the results, developments and achievements of applied physics, of heat and light and which are readily adaptable to the practice of optometry. In other words, we are to discuss physical and not medical agents and their application to physiological abnormalities and not pathological.

Ocular Physical Therapy is composed of the following agents: Light, Electricity—Mechanics—Lenses, Prisms and Psychology.

Does my opponent wish to go on record that the study and application of light is not within the sphere of optometry? Or that the employment of mechanical means and methods for treating physiologic ocular muscular abnormalities is not within our province? Or, that optometrists should not study and apply Psychology? There certainly can be no question about lenses and prisms. By no stretch of the imagination can we conceive that he would be against optometrists using any of these agents now, after they have been widely used by nearly all progressive optometrists and that is exactly what the optometry laws in the different states authorize us to do. The only agents which my opponent may question is the application of electricity.

Electric energy is too closely related to light energy to be disassociated: as a matter of fact leading research workers in this field agree that *Light Energy* is *Electric Energy*. Crile contends that accord-

ing to the electronic theory "light waves" are "electric waves" and that the light of the sun is electric energy transmitted by the constant emission of electrons constantly vibrating within the body of the sun itself. *Light*, then, claims Crile is *electricity* and the effects of *light* are the results of the application of its *electrical energy*.

Indeed, one must not be a great student of physics to comprehend the truth of this statement. Let us just visualize an imaginary spectrum before us. Here we have the visible part of the spectrum from 3900 A. U. to 7700 A. U. on the end of this spectrum nearest the violet we have the ultra-violet with its several divisions: on the other end near the red we have the infra red: the near, and middle infra red, next the unexplored region and then we have the high frequency waves which we find in Alternating Current. Does this have any relation to light?

Not only is electrical energy identical to light energy but, heat energy without which the human machine could not exist, in common with electricity and with light is *radiant energy*. And certainly my opponent will not question the right of optometry to apply radiant energy. At this stage of our practice no one else does. I should like to ask my opponent to prove that mechanics, electricity, light and psychology are subjects dealing with pure medicine and are therefore outside of the field of optometry.

Now, my friends, I contend that it is desirable for optometrists to apply Ocular Physical Therapy in their practice because this new technique will prove of great help to our patients as well as to the practitioners. We do not have a single agent in our entire treatment armomentorium with which we can relieve our patients from pain. Drugs may do it but their use is not within our sphere. It is desirable that when we refract a patient or administer an oculo-prism treatment that we have our patients in a relaxed and comfortable condition.

When our patient, after his day's work, is suffering from pain or headache, which is due to fatigue, abnormal refractive conditions, or improper surroundings at his place of work, he is not a fit subject to be refracted and certainly will *not* get as much benefit from your oculo-prism treatment as he would if he did not have the pain or headache. What are we to do for our patients in cases of this kind? Are we to tell them to go home and when they are relieved from the pain and are relaxed to come back to us? Some may come back and others will not, and when they do come back it will be on the next day or a few days later. Here, is an unnecessary waste of time. Or shall we tell them to take aspirin or anacin tablets, these again are drugs and drugs we all agree are not within our sphere. What then are we to do with cases of this kind? The application of H. F. Current, using the stimulative technique for a few minutes will bring immediate and desired results. Again it is an established clinical fact that diathermy will relax cramped and spasmodic muscles. Here is a physical agent which holds much in store for our cases with muscular spasms, which are merely physical or functional. I shall ask my opponent to prove

that we are practicing medicine when we apply *diathermy* which is merely *heat* to a cramped muscle that is physiologically abnormal.

Ocular Physical Therapy may prove invaluable in the treatment of myopia, cataract, amblyopia, and other ocular abnormalities. It is a great aid in the treatment of muscular abnormalities, especially in some of the more stubborn cases. An example is the case of Elsie Smith, age 28 years, an office worker, who called at my office in May, 1930, for a refraction. The lenses she wore were prescribed four months ago by a friend of mine, a reputable optometrist. She claimed that she had her lenses changed each year but at no time did she notice any improvement in the condition of her eye so now she decided to change optometrists instead of changing the lenses again. Her refraction revealed that the prescription she wore was correct, however, she had some exophoria and her ductions were low 8/4 and treatments were advised. The usual methods of oculo-prism treatments were employed and after sixteen treatments had been given on alternate days, there was no improvement at all in her condition. I then decided to change the course of her treatments and substituted auto-condensation for local high frequency preceding the oculo-prism treatment and improvement was soon noticed—with twelve more treatments her adduction improved from 8/4 to 30/28. Time will not permit me to cite similar results in other cases. Dr. Wiseman, at the last Academy convention, and Dr. Peckham, on another occasion, attributed the cause of some muscular abnormalities to a slowing down of the flow of the nerve current to the muscle due to poor conductivity at the axons and dendrites of the nerve, or to a complete stoppage of the current flow altogether, and in these cases Peckham claims that we have to *force through a stimulus*. Both Drs. Wiseman and Peckham are right, but the question arises what methods and means do we optometrists have at our command to force through the stimulus? An electric current having a frequency of one to one and a half millions per second is our answer and this is precisely what I have done in the case I have just mentioned. High frequency current is the most powerful agent to force through a stimulus. It not only does this but more, it is a very good agent for the removal of fatigue and of toxic conditions caused by fatigue. It brings back to normal function inactive or physiologically abnormal cells which would otherwise die. It not only is an excellent restorative agent but it prevents, in many cases, the development of pathology.

The physiological reaction and the psychological effect of high frequency current upon the patient is one of comfort as the patient under the treatment invariably remarks "how fine it feels." If we consider only a few of the many valuable attributes of the physical agents I mentioned, we can not help but come to the conclusion that it is highly desirable that optometrists apply physical agents in their practice.

I wish to go a step further and state that not only is the applica-

tion of Ocular Physical Agents desirable but it is also necessary because as a profession we must move forward with the onward march of science or remain backward, which means death and extinction. We must broaden the scope of optometry to meet changing conditions. We must provide a broader field for the incoming generation of optometrists. In this connection, think of the young graduate optometrists. Here we are setting up for them high educational standards, high ethical standards, high office equipment standards and when they start out to practice they find themselves circumscribed by innumerable limitations. Unfortunately, most of these restrictions and limitations are the results of our own making, of the near-sighted view of some of the optometric legislative committees. From time to time we hear statements made and articles written about some of these new graduates drifting into stores and into commercialism which is certainly disappointing, but do not blame them—we ourselves are to be blamed. We have given little time and thought to the economic aspect of our profession. Look at the Academy convention, our small attendance is not due merely to the general depression, it is not due to the location of the convention place. No. It is due to the fact that too many of the fellows can not afford the luxury to spend a little time and money to attend these conventions. Again, we have 120 members in the Academy, fifteen times as many are eligible, ten times as many are anxious and interested to join, but they are not in the Academy for economic reasons only. We should add those techniques to our practice because it will help the optometrist to succeed. My opponent may say we have the oculo-prism treatment technique, but have you stopped to think that every possible type of oculo-prism treatment technique we have is of a purely subjective nature? How far would we, as optometrists, get with our refraction today if we were to use a subjective system only? Not very far. The same is true in the treatment field. It is necessary for us to get an objective system of treatment not as a supplement to our present day subjective method but as a complement to it. Ocular Physical Therapy is an objective method and fills our long felt need.

The application of Ocular Physical Therapy by optometrists will not only improve our existing technique, but it will also tend to shorten the treatment period, a point which is of extreme interest to the practitioner and patient alike. It will also increase the number of our successes and reduce the number of failures. Ocular Physical Therapy will open up new fields for optometric practice and research and it will place optometry on a higher level with other professions.

The use of Ocular Physical Therapy agents is not only desirable and necessary but is also practical. With our present day knowledge of H. F. and diathermy, with the improved instrumentation on the marker and with a perfected technique, it is found to be entirely practical and safe. No fear need be had by anyone about any accidents as the dosage is small and the patient's tolerance point is our guide as well as our safety valve, for as soon as the current applied becomes

a little too strong the patient will tell you that it is getting too hot.

Light. The application of light from a spectroband lamp, *i. e.,* the application of individual light bands of the spectrum is certainly practical.

Psycho-Therapy or Applied Psychology is a part of physical therapy and is one of its most practical agents. While my opponent is preaching against the use of Ocular Physical Therapy by optometrists, I am certain that he is practicing one part at least to the fullest extent. Being a student of psychology that my worthy opponent is and having the kind of a practice that he has, it is not conceivable that he is not making use to the fullest extent of applied psychology—psycho-therapy. As a matter of fact you all do that or at least try to and you have never questioned your own right about its application. This technique is very popular with the public and is therefore desirable.

Now that I have proven that it is desirable, that it is necessary and that it is practical for optometrists to apply ocular physical agents the question my opponent may raise is—is it legal for optometrists to apply the agents. This question can be answered by "yes" or "no." If one is interested in studying and applying these agents to *Physiological Abnormalities only* and then to use them as a complement to the other optometric techniques, the answer is *Yes.* This is the opinion of some legal minds I have consulted on this subject, this is the opinion of some leading optometric educators and this is also the opinion of some leading medical men, who are authorities in the field of physical therapy. On the other hand, if you are going to use physical therapy as a supplement to our present optometric technique or use *it to treat pathology* or to treat general physiological abnormalities other than ocular, then my answer is NO. We must differentiate between applying physical agents to treat physiological and pathological abnormalities. What do I mean by a physiological abnormality? I can best explain that by quoting a standard definition of physiology which treats the functional workings of the body in health as opposed to pathology which treat its function as disordered by disease. Our opponents seem to be frightened to even use the word therapy in optometric nomenclature because they think it belongs to medicine. Now let us see, according to the best authorities I have consulted, I find that therapy and treatment have the same meaning. Are we not using a form of therapy when we give oculo-prism treatments? Are we not employing different types of lens therapy in our practice? Of course we are. But, my opponent may say that treating with a lens or prism is not practicing medicine, and, on this I agree, but I should also ask him to prove that when we apply a tried and proven principle of psychology; of light or an electric current, that we are applying a drug. To be sure, some few medical practitioners make use of these agents, but this does not make them medical any more than the application of these agents by osteopaths, dentists, or optometrists, make them

strictly osteopathic, purely dental or exclusively optometric. It simply means that the same physical agents which may be applied by optometrists to treat physiological abnormalities may also be applied by medical practitioners in the treatment of pathology. Discussing this subject with Dr. Chas. Ireland, former colonel in charge of the U. S. Army Physical Therapy Department, he made this statement, "I can not see that optometrists are encroaching in any way upon the medical field if they use Physical Therapy in their treatment of ocular physiological abnormalities." And, here is some proof from legal authorities about the correctness of our statement. When optometry was figthing for its existence in the state of Pennsylvania, where the medical association contended that optometry, by prescribing glasses, is practicing medicine. Judge Wilson, in October, 1914, handed down the decision favorably to optometry—he disagreed with this contention and made the following analogy: "We cannot regard the fact that the work done by the eye specialist physician and that done by the optometrist, to a certain limited extent, lap over each other, constitute the optometrist a practitioner of medicine. Such work on the part of an optometrist was done by him perhaps and probably long before the eye specialist among physicians had either knowledge or the skill to do the work which is now done by both the physician and optometrist. It is to be supposed that reputable physicians, as a part of their practice, at times resort to the use of electricity and massage as a part of their method of treating diseases. Would it be fair application of the statutes in question to say that every masseur and every electrician was practicing medicine because he applied massage or used electric apparatus in the same way that physicians do or have done?"

This statement by Judge Wilson means much to us. It means that no school of practitioners is to be deprived of the right of using any physical agents because some of these agents are at times used by medical men. If high frequency, diathermy, or ultra-violet rays, lenses, prisms, psychology are used by some medical men, it does not become medical high frequency, medical diathermy, or medical ultra-violet light any more than the prescribing of lenses by medical men causes them to become medical lenses. It all simply means that the different therapeutic currents which are all "radiant energy" are at times applied as such by some medical practitioners, but this does not make the electric current become medical.

To quote further from the Pennsylvania court records, the medical association contended that: "Optometrists hold themselves out, without qualifications or reservations, as able to advise persons suffering from headache, dizziness, or defective vision, or other forms of eye trouble, whether their condition is due to disease of the eye requiring treatment by a physician, or merely to an abnormality in the shape of the eyeball which can be cured by the use of glasses, in which latter event they prescribe and furnish the glasses for them for profit.

Answer: "This request must be answered in the affirmative. At the same time the answer should be qualified by stating that, according

to the proofs, optometrists do not advise their patients that they have any particular disease of the eye, but simply that in the judgment of the optometrist the eye shows such signs of disease as requires examination or treatment by a physician. If there is no reason to believe that such a condition exists, then the optometrist may consider himself at liberty to treat the case himself by the making of glasses which he considers as adapted to the particular emergencies of the patient."

Again the medical association contended that: "The fact that optometrists make examinations with the use of instruments and without drugs does not prevent their work from being just as much a branch of medicine as if drugs were used instead of instruments. Answer: The facts would not prevent the work of optometrists from being a branch of medicine, provided, taking their work as a whole, they could properly be regarded as *practicing medicine.*"

The decision handed down by the Illinois Supreme Court in the case of an optometrist, Dr. Chas. L. Smith, is another interpretation of the legal status upholding our claim. The courts must give a broad interpretation of the legal status of optometry for if a narrow and limited interpretation was placed on our optometry laws as my friends within our profession do, then 75 per cent of the optometrists in this country who do anything besides the fitting of a pair of glasses could be prosecuted as practicing something they are not licensed to do. Just let us look at some of the optometry definitions and you will be surprised to learn as I was that in most states the optometrists are not even legalized to give oculo-prism treatments or exercises of any kind.

Now, let us take for instance, the state of Massachusetts where my opponent hails from, there optometry is defined to be the employment of any method or means other than the use of drugs, for the measurement of the powers of vision and the adaptation of lenses for the aid thereof. Do you find anything there authorizing optometrists to give muscular treatments of any kind? No. Yet I know that most of the optometrists in that state give oculo-prism treatments to their patients. With such a definition in their optometry laws, give us a good attorney and we can arrest and prosecute every professional optometrist in Massachusetts. The members of the Board and my opponent will be the first to be arrested. But, my opponent may say that the court will have to put on a broad interpretation on the construction and meaning of the statute. I agree with him on this and just as optometrists are now applying oculo-prism treatments all over the country and their right to do this is not being questioned even though in thirty-eight states they are not legalized by law to practice this type of treatment, so I say that if the optometrists will study and apply physical agents in their practice in order to improve their present optometric technique, their right to do this will not be questioned. This is not a mere assumption but an actual fact. It stands to reason that if optometrists were never prosecuted for giving muscular treatments, which some other profession may have properly laid claim to

it as a part of its work, that now if we apply Ocular Physical Therapy no optometrist will be prosecuted because there is no profession at the present time laying any claim to it and no profession could prove its case in court if it tried to lay claim to it.

The medical board of examiners will not even try to prosecute any ethical optometrists who are applying Ocular Physical Therapy to physiological abnormalities. It is a fact that a number of optometrists throughout the country have been using Physical Therapy in their optometric practice for years and no one optometrist or medical practitioner ever thought of raising the question of legality. It is only now when we are trying to place this practice on a more scientific basis that opposition arises, and ironical as it may seem, the opposition comes not from medical men but from optometrists.

My opponent may cite cases where chiropractors, who applied physical therapy were recently convicted in court, but that has no bearing on our case because the chiropractic laws permit them to apply manipulative treatment to the spine and the application by them of General Physical Therapy for the general treatment of diseases constitutes the practice of medicine. No court will prosecute us for applying certain physical agents which are the results of applied physics and psychology, in order to improve our present day optometric technique. Especially, when we can prove in court that the history of medicine shows that for many years that profession opposed the use of Physical Therapy by its members on the ground that it is not medical and members of that profession who applied Physical Therapy in their practice were for years prosecuted and persecuted.

Dr. H. L. Murray in a paper read as late as April, 1928, before the Victoria Branch of the British Medical Association stated that: "The treatment by physical agents has been used in some form for all time, but until recently it has not especially been taken up by the medical profession and carried out in a scientific spirit of investigation. Even now it is mostly carried on outside of the profession." In an editorial in the British Journal of Physio-therapy (a medical publication) of November, 1930, one of the editors complains of the antagonism and opposition Physical Therapy has to contend with. It reads in part: "It falls to the lot of every pioneer to contend with opposition, prejudice, misrepresentation, accusations of self seeking and all other weapons used by those who do not desire to be disturbed from their comfortable complacency . . . Who are these enemies of physio-therapy? First they are large numbers of physicians and surgeons, almost all of them one might say, but the most enlightened among them." This statement describes the condition so well, not only does it tell the truth about the opposition of the medical profession to their members who try to use physical therapy but it also fits the condition which prevails in our own profession.

The history of opposition by the medical profession to their members who practice physical therapy is the same in the United States

as that in England. Now with history showing that the medical profession has been opposing the use of physical therapy by its own members certainly that profession cannot and will not claim it now as an integral part of its own practice.

We can also establish priority right to the use of Ocular Physical Therapy because right now there are very few ophthalmologists who make use of physical therapy and the few who do use it apply it to the treatment of pathology and not to physiological abnormalities. If we search their literature we find nothing pertaining to Ocular Physical Therapy.

Our opponents claim that we should leave this field of Ocular Physical Therapy to the medical practitioners to whom this field belongs by virtue of their training. Those who make such statements are not well informed as to the actual existing conditions. This subject of the medical men's training in physical therapy was recently discussed by Disraeli Kobak, M. D., editor of Archives of Physical Therapy, the official organ of the American Congress of Physical Therapy (a medical organization). Dr. Kobak said in part: "The average physician who is sincerely interested in physical therapy has had very little opportunity to master the physics of high frequency currents during his preparatory work in medicine. He therefore knows very little about the foundation upon which the structure of this therapy is built. He has received no medical nor pre-medical training in which to correlate the physical forces utilized in his practice. At best he has a grotesque conception of the physics of high frequency currents, or of the nature of the dynamics of heat and light. The average physician makes use of diathermy in an empirical manner. He is satisfied most often to accept the reasons for its effectiveness on the authority of the printed word. Unfortunately, he lacks that critical judgment that comes with the study and training and experience."

My opponents may also be interested to learn how physical therapy is practiced by the medical profession upon whom they wish to force a monopoly on this subject. Dr. Joseph E. Waddington, one of the leading medical authorities on this subject, in a discussion recently before the American Physical Therapy Congress, deplored the fact that little consideration is given physical therapy by the medical practitioners and hospitals. He said in part: "In Detroit, the fourth largest city in the country, there are very few hospitals that have a physical therapy director. I know of a hospital that has some physical therapy equipment but no physical therapy director. It has a girl in charge of this department who has taken a few courses here and there. A girl I trained in my office in a course of six weeks went down there and took charge. I grant you she was a clever girl, but fancy a girl with a training of six weeks taking charge of that department in a hospital in Detroit. Our largest hospital has no physical therapy director, and everything is referred to two girls to take charge of physical therapy. Everything is referred to those girls. When a staff member recently sent down a case, the interne's instructions were:

'Give this patient ten minutes of ultra-violet three times a day.' That was the order that came down. The girl called up the interne and he said: 'I gave the order.' She tried to get the superintendent but he was away. Fortunately, the order did not say at what distance, so she put a lamp at one end of the corridor and the patient at the other end.

That is the way physical therapy is understood and practiced in some hospitals at the present time. It is a sad comment on what is being done."

From an educational standpoint, we can show that optometry is more qualified to apply Ocular Physical Therapy than is the medical practitioner because our major study is the field of physics, light and psychology, which make up the main subjects which enter into Ocular Physical Therapy. We can show that until recently this subject was not even taught in any medical schools. Where did the 150,000 medical practitioners of today learn this subject? Now, it is being taught in some twelve of one hundred or more medical colleges and then in most of them it is an elective subject and not a requirement.

Take for instance in the Indiana University Medical School where this subject is a requirement the medical student devotes only thirty hours to the theory and practice of general physical therapy. I do not blame the medical profession for not allowing more time in their colleges for the study of this important subject, because according to the leading medical educators the medical curriculum is toppling, because it is top heavy and they can not add any more to it. Optometrists, on the other hand, are in a much better position: now that our schools offer a four-year course we have ample time to teach our students the theoretical and practical part of Ocular Physical Therapy. Did my opponent ask himself this question—is the dentist by virtue of his training more prepared to practice physical therapy than the optometrist? The dentist does not study in college any of the subjects which enter physical therapy, yet there are a number of dentists today applying dental physical therapy. Is there anything in the dental laws which permits them to apply physical therapy any more than the optometrists? No. Yet they do not raise any of the nonsensical questions that are being raised by optometrists.

They do not run to the attorney generals or to the state board for rulings on the subject. Those who care to incorporate this new technique into their practice do it and those who question the advisability and merit leave it alone. This is the proper course to follow and if we optometrists have to imitate then let us imitate dentistry and not medicine. The medical profession tabooed the subject of physical therapy and its advocates *were* and still *are* sneered at and you see now the deplorable results—is optometry to make the same mistake or are we big enough to learn something from history?

In conclusion let me say that Ocular Physical Therapy, being made up of the physiology, applied psychology, and applied physics, is a

natural part of the practice of optometry. We should cultivate and develop this in our own field to the fullest extent. It will not only improve greatly the prestige and the practice of optometry, but it will be of great benefit to the public. We have no reason in the world for not applying Ocular Physical Therapy in our practice excepting that we do not want to disturb our complacency. We do not want to change our mode of practice because we might have to learn something new and in a different way than we have been accustomed to doing it before—that is all. All this talk we will be encroaching upon medicine and that medicine will contest our right to the application of Ocular Physical Therapy is mere nonsense. It is a smoke screen, that is all. It is simply a matter of being brave and strong enough to stand up like a man and demand the right that fully belongs to us and keep it when we do get it. The trouble is that some of the members of our profession have had an "inferiority complex" for so long that it actually has turned into a "fear complex" and for their benefit in my closing remarks I wish to remind you in the American Credo by our well known friend from New York, Julius Berg:

"Walk up, if the elevator's not running,
And creep if you cannot walk;
If creeping is hard, then crawl along,
Don't be a kicker and squawk,
Go out and get what you're after,
Just battle and never give in:
The world is big and you must come through,
If you have the desire to win.

Be honest and fair in the struggle,
Meet obstacles all with a smile—
Climb the ladder rung by rung,
And you're bound to come out worthwhile,
Backbone—not wishbone—is needed,
Pluck—not luck—as they say:
The manhood to win, the courage to grin,
Are the things that win the day."

DR. J. I. KURTZ,
FOSHAY TOWER,
MINNEAPOLIS, MINN.

SHALL OPTOMETRY APPLY OCULAR PHYSICAL THERAPY IN ITS PRACTICE?*

Negative Address by

C. R. Padelford, Opt. D., F. A. A. O.
Fall River, Mass.

If the application of Ocular Physical Therapy by optometrists is to be approved by the Academy, it can only be on the grounds that it is, positively, a safe and efficient optometric agent.

The history of therapeutics gives ample warning of the danger and likelihood of being deceived both as to the value and safety of approved therapeutic agents. As evidence of this fact I bring to your attention the following examples:

An advertisement in the July, 1930, issue of "American Medicine," says: "Atophan, logically, created a new era in the treatment of rheumatism and gouty conditions, neuralgia, neuritis, sciatica and lumbago, and has justly enjoyed over sixteen years of high esteem and favor of the medical profession, and its acceptance and use today are more widespread than ever."

In the August 2nd, 1930, issue of "The Journal of the American Medical Association" there is an editorial dealing with this drug. It is headed, "Atrophy of the liver due to Cinchophen preparation," and goes on to state that Cinchophen was introduced into therapeutics about 1908 (reinforced by the trade name Atophan), its striking effect on the elimination of uric acid captured the clinical imagination, which was at that time, perhaps somewhat over-conscious of uric acid. * * * Thus it flourished at the hands of the profession and found its way into almost every household as a friend of the arthritic. "If it did no good, at least it could do not harm." *This rubber stamp* was widely used, for it was thought to be literally true.

Suddenly in 1923 evidence became available indicating that the trusted and harmless household friend was causing fatal hepatitis. It is startling to reflect that this condition must have been going on for fifteen years before it was discovered.

*An abridgement of the material presented before the American Academy of Optometry at Omaha, December 15, 1930.

One hundred and thirty-two years ago, Edward Jenner introduced what is known as small-pox vaccination, and Sir Alfred Russell Wallace, Briton's eminent naturalist and scientist said of it, "Vaccination is the product of a pre-scientific age and had it not been for the unscientific haste of medical witnesses to declare that vaccination protected against small-pox during a whole lifetime, a fact of which they had not, and could not possibly have any evidence (in fact he states that there was ample evidence to prove the contrary even as early as the first ten years of the nineteenth century, 1800-1810), this proof of failure should have convinced them, and have prevented what is really one of the scandals of the nineteenth century."

He calls attention to the misconception that vaccination being a surgical operation to guard against a special disease, medical men can alone judge of its value, while the very reverse is true, and for that reason that they are interested parties, not merely in pecuniary sense, but as effecting the prestige of the whole profession.

This brings to mind the story of a death from an automobile accident which resulted in a lawsuit during which a witness of the accident stated that the victim was killed, whereupon the lawyer for the defense asked the witness if he was a physician, and receiving the answer that he was not, the lawyer asked how the witness, not being a physician, knew that the man was killed, and he answered, "I know at least that they buried him on suspicion three days later."

Seventy-one thousand four hundred and fifty-three deaths from small-pox in The Philippines during 1918-19-20 speaks most emphatically for the accuracy of Wallace's conclusions, particularly as no country had ever been so thoroughly vaccinated and re-vaccinated.

Dean C. Worcester, member of The Philippine commission, 1900-1913, in his book, "The Philippines Past and Present," published in 1914, states that "more than ten million vaccinations had been performed with the result that the annual deaths from small-pox had decreased from 40,000 to 700 for the year just ended."

Supplementing Worcester's report is that of the chief of the division of sanitation, city of Manila, in his annual report of the Philippine health service for 1920, pages 141-142, comments upon the fact that during the nine years preceding 1918, "hundred after hundred of thousands of people were yearly vaccinated and re-vaccinated in Manila with the most unfortunate result, that the 1918 epidemic looks prima facie as a flagrant failure of the classic immunization toward future epidemics."

During the period above mentioned there were 162,503 cases of small-pox, 71,453 of which were fatal, and this, a death rate of 44½% in spite vaccinations and re-vaccinations to an extent that no American city or state would tolerate.

Let me call to your attention the fact that practically no mention of this epidemic was made in the public press of our country. Which means that the information was withheld on account of the desperate

showing of the lauded practice, or that the commercial interests, manufacturers of vaccine virus exercised strong-arm methods to keep American citizens in ignorance regarding the situation.

Charles Creighton, M. D., says of long postponed results of vaccination: "Rarely, if ever, does a physician deem it necessary to keep in touch with the children he vaccinates, having in mind the possible development in later months or years of symptoms which would indicate that there had been induced, by vaccination, a far more serious and lasting complaint than is commonly believed to ensue in consequence of this operation.

From the beginning the advocates of vaccination have grossly exaggerated its values, denied its dangers, and concealed its disastrous results, and when its value has been questioned they have offered childish generalities in the place of facts, and have resorted to ridicule and abuse.

It has been called one of the scandals of the nineteenth century but how great a scandal is yet to be proven. "It has long been suspected that vaccination might be an etiological factor in the causation of cancer, and while as yet, direct proof that such is the case is lacking, much evidence has accumulated which seemingly shows that this fear is far from being unwarranted."

In the sixth annual report of The New York State Cancer Laboratory there appears, on page 62, the following: "We found that the organism of vaccinia, while undergoing development, shows essentially the same phases we had already noted in the organisms observed in fresh scrapings of cancer and in the peritonical fluid and blood of cancer cases."

Sir Wallace, in a letter written March 26, 1911, speaking of vaccination and referring to "the rapidity of increase of that most terrible of all diseases, cancer, in every civilized country" says, "There is no other cause alleged for the increase of cancer so probable and efficient as this."

On page 1,880 of the June 14th, 1913, issue of "The Journal of American Medical Association," there appears the following statement: "In reality the medical profession has allowed itself to be exploited by mercantile interests to a point at which promiscuous vaccine therapy with all its faults is widely practiced."

This sort of thing will eventually react to the detriment of the medical profession, but meantime the people are being exploited because of their faith in authority and lack of confidence in their own ability to think.

At any rate, let us continue with the evidence of man's tendency to believe without sufficient evidence. "In The Christian Science Monitor for January 26th, 1924, there is a report from Chicago stating that a Mrs. Bobis had obtained a verdict in the Cook County Circuit Court, on January 24th, 1924, of $10,000 damages against Dr. Spencer C. Dickerson, a physician in the employ of the health depart-

ment, for the death of her daughter. The child was inoculated at school in May, 1920, with toxin-antitoxin; became unconscious, and remained so until her death five days later. The case had been pending for more than three years."

In Dallas, Texas, 1919, ten children were killed and over sixty others injured by toxin-antitoxin which had passed the tests laid down by the New York Health Department.

In sixty-nine of these cases, suits were entered at the local court against the representative of the company (The Mulford Company of Philadelphia), who manufactured the solution, and damages were agreed to in every case. In seven other cases the matter was settled out of court.

In Bridgewater and Concord, Mass., 1924, forty-five children were seriously affected by Schick materials produced in the state laboratory, or at least obtained through the State Board of Health. And by the way, these men of authority and so-called science had previously claimed that Massachusetts was safe from such things as occurred in Dallas, because of superior knowledge and ability in this section of the country.

Regarding tuberculin, visit your public library and read the editorial in The Journal of the American Journal, Medical Association, Sept. 28, 1912, page 1195; an editorial in The New York Medical Journal, March 15, 1913, page 562; and an article, "The Present Status of Tuberculin," The Journal of the American Medical Association, March 14, 1914, page 873, and after reading them you will appreciate how thin the ice can be on which authority skates.

In the November 16th, 1928, issue of The London Lancet, page 669, is the report of an "Outbreak of Typhoid Fever Among Inoculated Soldiers."

According to the report of Captain Fred M. Meader, U. S. M. C., an American unit "arrived at Liverpool July 10th. After disembarkation the organization proceeded to ————. At Liverpool three cases were left at the Red Cross Hospital, and it is reported that two other cases were left at some station en route. At the American rest camp 40 soldiers were found ill and transferred to a base hospital, where a diagnosis of typhoid fever was made on 38 of them. The organization left the rest camp before the diagnosis of typhoid fever had been established, and it had since been learned that 57 other cases developed: this made a total of 95 cases of typhoid fever out of a company of 248 men. All the above-mentioned cases had been inoculated with either typhoid vaccine, and para-typhoid vaccine, or triple typhoid vaccine, or both. Many of them had received several doses in excess of the required number."

Before leaving the subject of typhoid vaccination let me call to your attention an article written by Edgar M. Medlar, M. D., of The Medical Corps, U. S. Army, and published in The Journal of the American Medical Association, December 28, 1918:

"From time to time, since the use of typhoid vaccine as a pro-

phylactic in the control of typhoid fever, there has been objections on the part of medical officers to its use, the main one being that it predisposes the individual to infection with other diseases."

Some years ago, I heard a Dr. Allard, then medical director of The Boston Mutual Insurance Company, say: "I have so frequently seen tuberculosis develop after vaccination that I am convinced that vaccination is a contributing cause."

As a general proposition, therapeutic agents have a primary and secondary action. In the case of "Atophan," both are known, and most individuals would choose to suffer from rheumatism, neuralgia, etc., rather than to take a chance of death from atrophy of the liver.

The secondary effect of X-ray was destruction of tissue, and death in many instances. That of vaccination, a proven amount of sickness, suffering and death, also lowered resistance to other infections, and probably the greatest factor in the increase of cancer and a delusion with all.

It is plain to be seen that "the rubber stamp, if it does no good, it can do no harm" is used with abandon, and that many things which we have been taught to regard as true beyond any question, are according to the available evidence, which includes the death records where they are properly a part, not only untrue, but a product of superstition, commercialism and credulity. If this seems harsh, let us turn your thoughts to their victims.

Paracelsus (1493-1541) said, "He who wants to know man must look upon him as a whole and not as a patched-up piece of work. If he finds a part of the human body diseased, he must look for the causes which produce the disease, and not merely treat the external effects. Philosophy, i. e., the true perception and understanding of cause and effect is the mother of the physician, and explains the origin of all diseases. In this understanding rests the indication of the true remedy, and he who is not able to understand will accomplish nothing and he will go on in the future laming, crippling, and killing his patients."

We are told by Granger (Physical Therapeutic Technic, 1929), that the physiological effects produced by electricity are four, and possibly five in number and can be tabulated as follows: Chemical, Thermal, Mechanical, Psychical, and Stimulative especially as regards the sympathetic nervous system, and that "Chemical properties are inherent in the galvanic current, and to a slight degree in static electricity. As is stated under Galvanism the polar effects are important and if wrongfully directed may result in disaster."

He tabulates the Positive Pole characteristics as follows:

(1) Attracts oxygen.
(2) Hence will corrode metal.
(3) Hardens or desiccates tissues.
(4) Hence as it is an acid caustic the resulting scar will be hard and unyielding.
(5) Is a vasoconstrictor.

(6) Hence will stop bleeding.
(7) Has distinct sedative properties.

And the Negative Pole as follows:

(1) Attracts hydrogen.
(2) Will not corrode metal
(3) Liquifies and disintegrates tissues.
(4) Hence as it is an alkaline caustic the resulting scar will be soft and pliable.
(5) Is a vasodilator.
(6) Hence will increase bleeding.
(7) Is an irritant and hence will produce hyper-sensitiveness.

Says Grover (High Frequency Practice, The Electron Press, 1929), "The passage of high frequency currents through the tissues of the body sets up a violent agitation of the electrons of which the tissues are composed; the resistance offered to the movements of electrons results in heat." He further says, "Diathermy produces chemical changes in the cells, increases the red blood cells and lymphocytes; increases percentage of hemoglobin and decreases the nitrogen content of the blood, and may increase or decrease glandular activity."

Darrow says, "Let us pause to note one immensely important fact. We have seen that in the atom of hydrogn we have a single planetary electron; in helium, two; in lithium, three, and so on until we reach ninety-two in uranium."

In 1925, the scientific world was startled by announcements coming out of Berlin and Tokio that in each capital mercury had been successfully changed into gold. The method in each instance consisted in passing an electric discharge through mercury vapor. The atomic number of mercury is 80 and that of gold 79. That is, the nucleus of a mercury atom possesses 80 positive charges and that of an atom of gold 79 charges. Suppose one negative electron should be lodged safely within the nuclear fold of the mercury atom and find there a haven of rest. This electron would, of course, neutralize one positive charge and thereby reduce the atomic number 80, that of mercury, to 79, that of gold.

If chemical changes are to be made in the human body it is necessary first, to know what change is required, and second, how to make that particular change. When the physical chemist can determine the normal chemistry of the human body and also any departure from that standard, and the electrical scientist can confine the chemical action of diathermy to what is required, then diathermy will be a science, but not until then.

Regarding the medical or non-medical character of ocular physical therapy, I note with interest, Dr. Koch's statement that Dr. Kurtz at no time advocates the treatment of pathologic conditions by optometrists, and I accept this statement in spite of the fact that I find in Dr. Kurtz' book, sections on Acidosis, Prevention of Muscular Atrophy, Blepharitis, Cataract, Chalazion, etc.

But is not enough to foreswear the treatment of pathology, it is necessary to confine the action of diathermy within optometric limits and this, I feel sure cannot be done. Grover says, "Diathermy produces chemical changes in the cells; increases the red blood cells and lymphocytes, increases percentage of hemoglobin and decreases the nitrogen content of the blood, may increase or decrease glanular activity," and he says, "It must be remembered that the results from diathermy to the head are both local and constitutional."

In a review of the work by Monbrun and Casteran which appeared in The Archives of Ophthalmology, it is explained that the authors believe that an attempt to use diathermy for inter-ocular conditions is dangerous, and that they have confined their work to the lids, conjunctiva and cornea. The dangers of diathermy are due, they say, to the deep effect of the heat generated.

(1) Pus without drainage.

(2) Lesions where there is likelihood of hemorrhage.

And Grover adds the following: (1) Diathermy is positively contra-indicated where there is a recent history of hemorrhage; (2) It powerfully stimulates the secretion of glandula organs, consequently it should not be applied to the thyroid gland in hyperthyroidism; (3) It should not be applied to any place where there is a collection of pus. The strepto and staphlococci are increased by the stimulation and there might be sufficient absorption to produce pyemia; (4) It is best to avoid its applications to sinuses of the head unless there is good drainage. The safe application of diathermy then, requires that the operator be capable of determining the patient's fitness to take the treatments, or that he, before applying diathermy, have the patient examined for adverse conditions.

I am told that the medical department of the University of Pennsylvania has carried out a series of experiments with diathermy and found that improvement was temporary and that the recurring conditions were more severe than before treatment. While I cannot vouch for the accuracy of this report I consider my source of information to be reliable.

With these conditions in mind and recognizing the need for special training and alertness to detect any unfavorable reactions from diathermy, and as it seems evident that it affects the chemistry of the body and glandula functions, we should feel compelled to conclude that diathermy is not an optometric agent and should not be applied by optometrists as such.

DR. C. R. PADELFORD,
177 NO. MAIN ST.,
FALL RIVER, MASS.

AMERICAN JOURNAL OF OPTOMETRY

VOL. 8 DECEMBER, 1931 NO. 12

EDITORIAL STAFF

DR. CAREL C. KOCH, Editor
1501 Foshay Tower
821 Marquette Avenue
Minneapolis, Minn.

DR. JACK I. KURTZ, Associate Editor
1501 Foshay Tower
821 Marquette Avenue
Minneapolis, Minn.

Original papers, scientific communications, clinical reports, society proceedings, books for review, and correspondence should be sent to the Editor.

Annual Subscription, $3.00 in Advance. Canada, $3.50. Foreign, $4.00.
Single Copies, 40c.

Copy of advertisements must be sent in by the tenth of the month preceding their appearance. Subscriptions, applications for single copies, communications with reference to advertising or other business should be addressed to the Business Manager, Dr. Jack I. Kurtz, 1501 Foshay Tower, Minneapolis, Minn.

Published Monthly by the
American Journal of Optometry Publishing Association.

The Journal has no objection to the reprinting by other magazines of any of its articles, provided such reprints are properly credited to the American Journal of Optometry.

THE TREATMENT OF MYOPIA

Edward Jackson, former editor of the American Journal of Ophthalmology, in the August issue of that magazine, outlines a routine course of procedure which should be followed as nearly as possible in all young myopes. While Jackson does not admit the possibilities of entirely overcoming the defect, he claims that by strict adherence to this program that most of the progressive myopic cases can be avoided. Dr. Jackson's suggestions are as follows:

1. Avoidance of much use of the eyes for near seeing in early childhood, during the period of most rapid development and growth, up to six to ten years.

2. Testing the vision and examining the eyes of children entering school, especially for ocular defects that will lead to excessive convergence. Such testing should include accurate measurement of ametropia.

3. Watching the children in school to secure an erect posture and keeping the book away from the eyes. Good print and good illumination both in school and in the home. Foerster showed that the home work done with the eyes was greater than the work in school.

4. Sight-saving classes for children having poor vision, or suf-

fering from any ocular condition that would be seriously aggravated by ordinary school work. Each of these children should be placed in such a class on the advice of an oculist, who should see the child every three months, so long as the sight-saving supervision was necessary. In such a class the child should spend a part of the day in the special room for sight-saving instruction, and a part receiving oral instruction with seeing children of the same grade.

5. The constant wearing of accurate correcting glasses, especially of full strength concave glasses.

6. Regular daily, outdoor living and exercise: for children, youths and adults.

7. Close attention to the child's general health and nutrition, including care as to vitamins, and endocrine secretions. As to hereditary and congenital myopia, this may need to be extended to the care of the expectant mother.

This is a program that is not impossible of fulfillment and as optometrists we can see to it that young myopes which are brought in to us are given this careful attention suggested by this Dean of Refractionists, Edward Jackson, who has devoted many years of his life to the careful study of these problems.

C. C. K.

BOOK NOTICES

THE BEHAVIOR OF HEALTH, by Dr. N. A. Ferri, published by the Advance Publishers, 109 Dearborn St., Chicago, Ill. 236 pages. 1930.

The Behavior of Health, written by Dr. Ferri, is considered to be a thought-provoking, stimulating and helpful little book. In this book the author tried to correlate pertinent psychological and physiological facts and their interpretations with therapeutic applications. He displays a deep understanding and insight to these complicated human physical and mental phenomena.

J. I. K.

ANNOTATIONS AND SOCIETY PROCEEDINGS

The American Journal of Optometry is the Official Organ of the American Academy of Optometry, as well as the Organ of the Arkansas, Delaware, Indiana, Iowa, Maine, Maryland, Michigan, Minnesota, Nebraska, North Dakota, Oklahoma, Pennsylvania, South Dakota, Vermont and West Virginia Optometric Associations.

The following gentlemen have consented to supply items of interest from their respective sections, acting in the capacity of

ASSOCIATE STATE EDITORS

DR. E. B. ALEXANDER
Duncan, Okla.
DR. A. S. ANDERSON
Minot, N. D.
DR. J. F. ANDREAE
Baltimore, Md.
DR. O. E. BELL
Fairmont, W. Va.
DR. C. H. DEGRAFF
Monroe, Mich.
DR. L. P. FOLSOM
South Royalton, Vt.
DR. F. W. FREEMAN
Anderson, Ind.
DR. A. J. LARGE
Winona, Minn.
DR. J. J. LIVINGSTON
Little Rock, Ark.
DR. M. B. MEYER
Wilmington, Del.
DR. J. K. MORRIS
Erie, Penn.
DR. C. A. PERRIGO
Norfolk, Neb.
DR. D. E. PLAISTED
Lewiston, Me.
DR. H. N. SMITH
Sioux Falls, S. D.
DR. H. R. SPITLER
Eaton, Ohio
DR. A. P. WHEELOCK
Des Moines, Ia.

---

* * * * * *

MARYLAND OPTOMETRIC SOCIETY

The regular monthly meeting of the Maryland Optometric Association was held on Thursday, November 12, at the clinic rooms of the association. A large attendance was present. Dr. J. H. Mayerburg presided over the session; Dr. J. Fred Andreae acted as secretary.

The speaker of the evening was Dr. Robert H. Hoofnagle, who delivered his third of a series of talks on the "Blur Point."

It was decided that an educational round-table gathering be held every week, at which case reports and the latest optometric developments will be taken up and discussed.

* * * * * *

NASSAU SUFFOLK SOCIETY

Dr. S. H. Roberts of Columbia University was the guest speaker of the Long Island Optical Society at a well attended meeting held in Freeport. During the business meeting, there was a general discussion, relative to protecting the public and legitimate optometrists from optical offices, using price and bait methods in their business. A committee was appointed to consider the desirability of a publicity and advertising campaign by the society for the purpose of acquainting the public with the problem and its evils. After the business meeting, Dr. Roberts led the seminar. He stressed the importance of the objective tests in refraction. They instill confidence in both the examiner and the patient—

they are time-savers, and good pathfinders in pathologic, refractive and innervational diagnosis. The ophthalmometer, Dr. Roberts stressed, was the most objective test and showed how it furnishes valuable information in diagnosis. Considering that the cornea accounts for 80% of the refraction, the ophthalmometer findings should be important. Static and dynamic skiascopy and the new Tait method were, at length, delved into.

* * * * * *

SOUTHWESTERN NEW YORK SOCIETY

The Southwestern New York Optometric Society held its regular monthly meeting at the Olean House, Olean, N. Y., on Wednesday, October 21st.

The speaker of the evening was Mr. Ralph Coates, of the Silbert Optical Co.'s staff. He stressed the need of budgeting an optometric practice, outlining a practical budget system.

The next meeting of this society will be held at Jamestown, N. Y., on November 11th at which time Dr. Neumueller of the Pennsylvania College of Optometry will be present and lecture.

* * * * * *

OKLAHOMA ANNUAL CLINIC

Oklahoma has just completed her annual clinic under the direction of Dr. A. M. Skeffington, director of the Clinic Foundation. Dr. Skeffington is beginning his fifth year in foundation work.

In clinical work he spoke on every angle of the official eighteen point examination, also included many new and auxiliary points. We understand that the eighteen point routine examination has been officially adopted as a minimum by the International Board of Boards. In addition to the routine examination, he spoke on Sheard's "Zones of Comfort"; also on Jacques' "Blur Point." He explained in detail the analytical work being done by different groups throughout the United States and Canada, also the reference medical sheet for referring cases to medical practitioners. This sheet is very complete and leaves nothing undone from an optometric standpoint. The clinic was well attended by men from all parts of the state. Four cases were examined and analyzed during the three days while in Oklahoma City.

On Monday, October 12, Dr. Skeffington spoke before the American Business Men's Group of Oklahoma City. On Tuesday, October 13, he spoke to the Bristow High School. All high school students of Bristow assembled for the lecture at Central High School. At noon he spoke before the Chamber of Commerce of Chandler which represents a cross section of the citizenship of that city. At 2:00 P. M. the high school students of Chandler assembled at the Central High School auditorium where he delivered a very inspirational address. Wednesday, October 14, he spoke at noon before the Co-

operative Civic Club of Oklahoma City; and at 3:30 P. M. before the Parent-Teacher Association, the city superintendent, school faculty, board of education, health officers, etc., at the El Reno High School where the eye sight survey for four thousand students was getting under way. The city superintendent of El Reno schools, being an old friend of Dr. Skeffington's, was very enthusiastic about launching the eye sight survey of that county wherein the optometrists and medical examiners were joining hands in this campaign for better eye sight for school children.

In all Dr. Skeffington spoke before some three thousand three hundred people with his message on eye care. He went from Oklahoma City to Tulsa where he held a two day successful clinic and publicity work under the supervision of Dr. J. F. Batton, district chairman of the Tulsa district. Some one hundred forty inches of the most favorable publicity was given the clinic in this state including some important editorials and feature stories on clinic work and eye care.

From the standpoint of attendance, clinical instruction, and publicity it was one of the most successful clinics we have ever held in Oklahoma.

* * * * * *

SAGINAW VALLEY ZONE

The Saginaw Valley Zone Study Group held its last meeting Thursday, November 19th, studying the paper on, "The Value of 'Muscle' Determination." The next meeting is scheduled for December 3rd, in the offices of Dr. H. L. Bowers, chairman, 921 Washington Ave., Bay City, Mich.

* * * * * *

IT WILL PAY YOU
TO ESTABLISH THIS
STANDARD
IN YOUR
LENS
BUYING